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| <p>In the published version of this decision, some information has been omitted, pursuant to articles 24 and 25 of Council Regulation (EC) No 659/1999 of 22 March 1999 laying down detailed rules for the application of Article 93 of the EC Treaty, concerning non-disclosure of information covered by professional secrecy. The omissions are shown thus [...].</p> | | <p>PUBLIC VERSION</p> <p>This document is made available for information purposes only.</p> |
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**Subject: State Aid SA. 40227 (2014/N) – Portugal
Aid to the Windfloat project.**

Sir, /Madam,

1. PROCEDURE

- (1) Pursuant to Article 108(3) of the Treaty on the Functioning of the European Union (hereinafter referred to as TFEU), Portugal notified the project for the financing construction of the Windfloat prototype. Following pre-notification contacts, the application was submitted electronically on 15 December 2014. Additional information was submitted on 13 February 2015.

2. DESCRIPTION OF THE MEASURE

2.1. Background and objectives of the project

- (2) The notified measure proposes supporting the demonstration of a new semi-submersible floating wind technology for offshore wind power generation.
- (3) Conventional offshore wind turbines are normally mounted on foundations anchored to the sea floor to ensure stability. Current offshore technology uses

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different types of foundations allowing deployment in waters 20-80m deep. Floating wind turbines are being developed for deeper water. The Windplus consortium is developing one of such floating wind turbines.

- (4) Following positive results obtained with a prototype, the Windplus consortium intends to develop the technology to a pre-commercial phase with large turbines (>5 MW) and on the basis of a project with a total capacity of 25 MW. Portugal intends to provide aid to the 25 MW project. In order to test the new technology, the wind farm will be operated for 25 years delivering power to the grid.
- (5) The Windfloat project has been selected for funding by the European programme NER300. The Portuguese government is proposing to provide further support to Windfloat in the form of investment and operating aid.

2.2. The project

- (6) The Windfloat project will be located 20 km off the coast of Viana do Castelo, Portugal, in water depth of approximately 100 m. Turbine selection is currently on-going. Two configurations are possible: one using three, 8.33 MW Vestas V164 turbines; the other using four, 6.25 MW Siemens S154 turbines¹. The wind farm will be connected to the network with a direct connection at either 33 or 66 kV.
- (7) Characteristics of the Windfloat technology are:
 - The technology is turbine agnostic – it can be used with any turbine technology available in the market;
 - The technology has high stability – Windfloat maximizes stability while minimising the use of steel;
 - Depth flexibility – Windfloat can be used in depths from 40m;
 - Simplicity – assembly conducted fully onshore using existing, standard technologies.
- (8) The investment costs of the project are estimated at EUR [...]. The Windfloat project is expected to have a lifetime of 25 years while support will be paid for 20 years. The operating costs are expected to be approximately EUR [...] over 20 years.
- (9) The Windfloat project is expected to generate [...] MWh of electricity a year for 25 years.

2.3. Beneficiaries

- (10) Beneficiary of the aid will be the Windplus consortium. Windplus is participated by EDP Group (Energias de Portugal), Repsol (both through Principle Power), A. Silva Matos (a Portuguese steelworks maker) and Portugal Ventures (a Private

¹ Portugal submitted detailed costs calculation only for the larger turbines. However, the net benefits of the two types of turbines over the whole lifetime of the project are expected to be similar and turbines account for only [...] % of the total project costs.

Equity Fund owned by the Portuguese State). Figure 1 shows the shareholding structure of Windplus:

[...]

Figure 1: Windplus shareholding structure. Source: Portuguese authorities.

- (11) Windplus is the owner of Windfloat proprietary technology and it is the only company in the position to upscale the existing prototype. Few other designs exist for floating wind turbines, all in the pre-commercial phase of development.

2.4. Financing: budget, aid intensity and duration

- (12) The Windfloat will be financed from different sources. European funding from the NER300 programme will provide investment aid for the amount of EUR 29 990 526.
- (13) Windfloat will also receive investment and operating aid for EUR 19 004 000 from the Portuguese State through the Portuguese Carbon Fund, managed by the Portuguese Environment Agency, a public institute, under the control of the Portuguese Ministry of the Environment, Territory Management and Energy.
- (14) The investment aid of the Portuguese Carbon Fund will amount to EUR 6 004 000.
- (15) The operating aid of the Portuguese Carbon Fund will amount to EUR 13 000 000 and will be disbursed in the form of a feed in tariff of 34 EUR/MWh. The feed in tariff will be paid monthly for the electricity produced by the Windfloat plant, up to a maximum annual amount of EUR 2 800 000. In case the payment from the feed in tariff exceeds the maximum annual amount, the surplus will be paid in the following year until the limit of EUR 13 000 000 is reached. It is expected that the feed in tariff from the Portuguese Carbon Fund will be paid for 5 years.
- (16) The project will also receive aid in the form of a feed-in-tariff from the Portuguese State under the support scheme for experimental and pre-commercial renewable technologies².
- (17) The support scheme for experimental and pre-commercial renewable technologies consists of a feed-in-tariff of EUR 168/MWh for the first 10,6 MW and EUR 100/MWh for the remaining installed capacity and will apply for a period of 20 years.
- (18) The feed-in-tariff of EUR 100/MWh for the remaining installed capacity will be increased to EUR 129/MWh once the support from the Portuguese Carbon Fund stops as it has disbursed the maximum aid amount totalling EUR 19 004 000 (EUR 6 004 000 investment aid and EUR 13 000 000 operating aid).
- (19) Taking into account the operating aid (feed-in-tariff) from both the Carbon Fund and the support scheme for experimental and pre-commercial renewable technologies, the total operating aid will amount to a feed-in-tariff of EUR 162.8/MWh as long as the Carbon Fund pays aid (expected for the first 5

² This scheme is notified to the Commission under case number SA.39347 - "Support scheme for experimental and pre-commercial renewable technologies".

years) and EUR 145.5/MWh for the remaining period until the end of the 20 year support period (expected for 15 years)³. As from 1 January 2013, the tariff will be updated yearly using the Portuguese continental price index.

- (20) The total estimated cost of the project is EUR [...] for the first 20 years of which EUR [...] in investment costs and EUR [...] in operating costs. Portugal provided the production cost calculation on the basis of the information as presented above and summarised in table 1.

Table 1: Investment and operating costs and investment support. Source: Portuguese authorities.

| | |
|---------------------------------------|----------------|
| Investment aid | |
| a - Support to investment from APA | EUR 6 004 000 |
| b - Support to investment from NER300 | EUR 29 990 526 |
| Investment costs | EUR [...] |
| Operating costs | EUR [...] |
| TOTAL (costs-a-b) | EUR [...] |

- (21) Based on these figures which take into account the investment support from both the Carbon Fund and the NER300 programme and an expected output of [...] MWh, the production costs calculated as the Levelised Cost of Electricity (LCOE) are estimated at EUR [...]/MWh. The LCOE is calculated taking into account a Weighted Average Cost of Capital of 10.12 %. Portugal considers this rate close to the hurdle rates of similar projects.
- (22) The project has an estimated Internal Rate of Return (IRR) of [...] % on real basis, post tax.

2.5. National regulatory framework

- (23) The National legal bases establishing the Portuguese Carbon Fund are the Decree Law 71/2006 and the "Portaria" law 1202/2006.
- (24) The Portuguese authorities confirmed that the Portuguese Carbon Fund is not financed through a levy on electricity consumption. Funding for the Portuguese Carbon Fund comes from taxes and revenues from auctioning allowances under the EU ETS.
- (25) The support scheme for experimental and pre-commercial renewable technologies will be enacted by the Portuguese authorities through the implementing Decree-Law no. 172/2006, of 23 August, as amended by Decree-Law no. 215-B/2012, of 8 August.

³ This is calculated as the weighted average feed-in-tariff from the support scheme for experimental and pre-commercial renewable technologies and the Portuguese Carbon Fund.
 - Initial period: $(168 \cdot 10,6 + 100 \cdot 14,4) / 25 + 34 = 162,8$.
 - Remaining period: $(168 \cdot 10,6 + 129 \cdot 14,4) / 25 = 145,5$.

3. ASSESSMENT OF THE MEASURE:

3.1. Existence of aid

- (26) A measure constitutes State aid in the meaning of Article 107 (1) TFEU if it is "*granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods [...] in so far as it affects trade between Member States.*"
- (27) The beneficiary will receive support from the Portuguese State through the Portuguese Carbon Fund managed by the Portuguese Environment Agency. The Portuguese Environment Agency is a public institute, within the scope of the Portuguese Ministry of the Environment, Territory Management and Energy.
- (28) The Commission notes that these funds constitute state resources as the Portuguese Carbon Fund is funded by taxes and revenues from auctioning ETS allowances and the Portuguese Environment Agency acts subject to ministerial supervision.
- (29) The beneficiary will also receive funding through the support scheme for experimental and pre-commercial renewable technologies⁴. The Commission has found that this support scheme constitutes State aid⁵.
- (30) The notified measure favours generation of electricity from a specific offshore wind installation providing selective advantage to the beneficiary. Electricity is widely traded between Member States and therefore the notified measures are likely to distort the competition on the electricity market and affect trade between the Member States. Therefore the notified measures constitute State aid in the meaning of Article 107 TFEU.

3.2. Legality

- (31) The aid is committed before the end of 2014 subject to Commission approval. Therefore the Portuguese authorities did not put the aid measure into effect before a final Commission decision. Thus, Portugal has complied with the stand-still obligation set out in Article 108(3) TFEU.

3.3. Compatibility under the Guidelines on State aid for environmental protection and energy 2014-2020

- (32) The Commission has assessed the compatibility of the notified aid scheme on the basis of Article 107(3)(c) TFEU. The Commission notes that the notified measure aims at promoting the generation of electricity from renewable sources, namely offshore wind. As it regards support for electricity from renewable sources, the notified measure falls within the scope of the Guidelines on State aid for environmental protection and energy 2014-2020 (EEAG)⁶.

⁴ Further support is provided by the NER300 program as described in point (12). NER300 is a European program and the funded projects are selected at the EU level.

⁵ The scheme is assessed under the notification made by Portugal under case number SA.39347.

⁶ OJ C 200 of 28.06.2014.

- (33) The Commission has therefore assessed the notified measures based on the general compatibility provisions of the EEAG (set out in its Section 3.2) and based on the specific compatibility criteria for investment and operating aid granted for electricity from renewable energy sources (Section 3.3).

3.3.1. Objective of common interest

- (34) The aim of the notified aid measure is to help Portugal to achieve the long term climate change and energy sustainability targets in line with the EU 2030 strategy. The project will help Portugal expanding the portfolio of available renewable energy technologies. In line with points 30 and 31 of the EEAG, Portugal defined the objective of the measure and explained the expected contributions toward ensuring a competitive, sustainable and secure energy system.
- (35) Furthermore, in line with point 33 of the EEAG, Portugal demonstrated that the measure notified in particularly targets the longer term decarbonisation objective as it focuses on developing a technology from prototype to commercial level.
- (36) The Commission considers that the notified aid measures are aimed at an objective of common interest in accordance with Article 107(3)(c) of the Treaty.

3.3.2. Need for state aid, appropriate instrument and incentive effect

- (37) In point 107 of the EEAG the Commission acknowledges that "*under certain conditions State aid can be an appropriate instrument to contribute to the achievement of the EU objectives and related national targets*".
- (38) As stated in point 115 of the EEAG, the Commission in principle presumes the existence of a residual market failure which can render State aid necessary to encourage investments in renewable energy.
- (39) In addition, Portugal has demonstrated in line with point 38 of the EEAG by the figures presented in Table 1 and LCOE calculations that without the aid the costs from the floating offshore wind project would well exceed its revenues and that the measure therefore addressed a residual market failure in the form of negative externalities.
- (40) According to point 116 of the EEAG, in order to allow Member States to achieve their targets in line with the EU 2020 and 2030 objectives, the Commission presumes the granting of State aid is an appropriate instrument to promote energy from renewable sources (provided all other conditions are met).
- (41) In line with point 49 of the EEAG, the incentive effect occurs if the aid induces the beneficiary to change his behaviour towards reaching the objective of common interest which it would not do without the aid.
- (42) The Commission notes that without the aid the notified project would not be financially viable, as the plant will generate electricity at a cost much higher than the expected market price of electricity. In this context, the Portuguese authorities pointed out that the total project costs (including cost of capital and depreciation) are roughly three to four times higher than the projected revenues from the sales of electricity. In line with section 3.2.4.2, the Portuguese authorities showed that

without aid, power from the Windfloat wind farm cannot compete with electricity generated from other sources and the rate of return for the project would be negative. The aid therefore allows the beneficiary to change his behaviour and invest in the notified offshore wind project.

- (43) The Portuguese authorities confirmed that the applicant was required to submit an application form before being selected for and granted the aid. The Commission notes that the notified measures comply with the obligation to use an application form for aid, as set out in point 51 of the EEAG. The Commission further notes that the application was submitted before work on the projects has started.
- (44) Consequently, the Commission considers that the aid for the notified projects is necessary, granted by means of an appropriate instrument and provides the necessary incentive effect to address the objective of common interest.

3.3.3. Proportionality

- (45) According to point 69 of the EEAG, environmental aid is considered to be proportionate if the aid amount per beneficiary is limited to the minimum needed to achieve the environmental protection objective aimed for.
- (46) The Commission assessed proportionality of the aid under the provisions of Section 3.3.2 EEAG for the operating aid and Sections 3.3.1 and 3.2 for the investment aid.
- (47) The Portuguese authorities estimated the aid intensity of the investment aid according to the methodology explained in section 3.2.5 EEAG. For this purpose, the Portuguese authorities consider a Combined Cycle Gas Turbine (CCGT) plant of the same rated power as the counterfactual situation. The reference investment costs of a CCGT plant are estimated at EUR 636 000 per MW. The costs for deploying 25 MW in the counterfactual scenario are thus estimated at EUR 15 900 000.
- (48) When calculated according to the methodology described in point 73 of the EEAG, taking into account the counterfactual scenario described in point (47) and the investment costs described in point (20), the eligible costs for the project are estimated at EUR [...]. The aid intensity of the Windfloat project is, therefore, [...] % of the eligible costs.
- (49) For the purposes of complying with the cumulation rules, this percentage is also calculated on the basis of both the investment aid received from the Portuguese Carbon Fund and the investment support under NER300. The aid intensity would increase to [...] %. **Table 2** shows the eligible costs and the aid intensity calculation of the project.

Table 2: Aid intensity calculation.

| | |
|---------------------------------------|----------------|
| I- Investment aid | |
| a -Support to investment from APA | EUR 6 004 000 |
| b - Support to investment from NER300 | EUR 29 990 526 |
| Counterfactual scenario | |
| c - Investment cost CCGT | EUR 15 900 000 |

| | |
|---|------------------|
| II- Eligible costs | |
| d - Investment cost Windfloat | EUR [...] |
| TOTAL: d-c | EUR [...] |
| Aid intensity | |
| Percentage of eligible costs: (a+b)/Total | [...] % |

- (50) As the aid intensity for the investment aid received from the Carbon Fund, both including and excluding the support under NER300 is below the maximum aid intensity described in Annex I of the EEAG, the cumulation rules and aid intensity rules under Section 3.2.5 are respected.
- (51) The Commission notes that the aid will be granted before the end of 2015 and that therefore the conditions set out in point 124 and 126 are not applicable. Furthermore, the Commission notes that the need for a bidding process in a transitional phase was assessed in the notification of the support scheme for experimental and pre-commercial renewable technologies⁷.
- (52) As the aid is not granted through a competitive bidding process, in line with point 126 of the EEAG, the proportionality of the operating aid is assessed on the basis of point 131 of the EEAG.
- (53) As described in point (21) above, the LCOE is estimated at EUR [...]/MWh taking into account a Weighted Average Cost of Capital of 10.12 %. This estimate takes also into account the cumulated investment aid from the Portuguese Carbon Fund and the investment support from the NER300 programme⁸.
- (54) As described in point (19) above, the highest feed in tariff paid to the project amounts to EUR 162.8/MWh and is lower than the estimated LCOE of EUR [...]/MWh. Furthermore, the Portuguese authorities showed that the investment aid from the Portuguese Carbon Fund and the investment support from the NER300 programme is deducted from the total investment amount in calculating the LCOE (see point 131b of the EEAG). Aid will only be granted until the plant has been fully depreciated according to normal accounting rules as the project is depreciated in 25 years and aid will no longer be granted after 20 years.
- (55) As the notified aid only concerns aid to the Windfloat project and does not concern any other project, there is no need for an annual update of the production costs. The conditions of point 131 of the EEAG are therefore complied with.
- (56) In line with Section 3.2.5.3 the profitability of the project over the lifetime of the project was assessed. Taking into account on the one hand the investment and operating aid from the Portuguese Carbon Fund, the operating aid on the basis of the scheme for experimental and pre-commercial renewable technologies and the support from the NER300 programme and on the other hand the estimated investment and operating costs, the Portuguese authorities calculated an IRR of

⁷ See decision for case number SA.39347.

⁸ The Commission considers this rate in line with rates of return normally used for this type of projects, see decision for case number SA.39347.

approximately [...] % for the project. Portugal considers such rate of return appropriate since the Windfloat project, a technology in the early phase of development, is considerably more risky than a comparable investment using conventional technology.

- (57) The Commission considers that Portugal has sufficiently demonstrated that the IRR for the project is not exceeding a normal return for this type of project and notes that this rate is consistent with the ones previously approved by the Commission for conventional offshore wind projects⁹.
- (58) In view of the considerations set out above, it can be concluded that the state aid granted for the notified project is proportional.

3.3.4. Distortion of competition and balancing test

- (59) According to point 90 of the EEAG, the Commission considers that aid for environmental purposes will by its very nature tend to favour environmentally friendly products and technologies at the expense of other, more polluting ones. Furthermore, the effect of the aid will in principle not be viewed as an undue distortion of competition since it is inherently linked to its very objective.
- (60) The Commission further notes that the electricity generated by the Windfloat project will be a small fraction of the Portuguese electricity market and is estimated at less than 0.2%. In view of the limited size of the project (25 MW) and the general presumption that the distortive effects are limited, the Commission considers that the Portuguese authorities demonstrated that Section 3.2.6.3 is complied with. Therefore, the Commission considers that the notified project would not have any significant impact on competition in the Iberian electricity market.
- (61) In addition, according to point 116 of the EEAG, in order to allow Member States to achieve their targets in line with the EU 2020 and 2030 objectives, the Commission presumes the limited distortive effects of the aid (provided all other conditions are met).
- (62) The Commission therefore considers that the proposed measure does not have undue distortive effects on competition and trade so that the overall balance is positive.

3.3.5. Other aspects – Compliance with Articles 30 and 110 TFEU

- (63) As described in point (24) above, the aid from the Carbon Fund will be financed from taxes and ETS allowance auction revenues. The project will also benefit from aid under the support scheme for experimental and pre-commercial renewable technologies.
- (64) In the decision concerning the support scheme for experimental and pre-commercial renewable technologies¹⁰, the Commission concluded that the commitments offered by Portugal ensure compliance of the scheme with

⁹ C(2014) 5074 final. OJ C 393 of 7 November 2014, p. 9 – 12.

¹⁰ See decision for case number SA.39347.

Articles 30 and 110 TFEU. As the aid measure in favour of the Windfloat project is financed in the same way as the scheme for which compliance with Articles 30 and 110 TFEU was concluded, the Commission considers that the financing of the notified aid also complies with Article 30 and 110 TFEU.

3.3.6. Conclusion with regard to the compatibility of the measure

- (65) In light of the above, the Commission considers that the notified aid measure is compatible with the internal market on the basis of the EEAG.

4. CONCLUSION

The Commission has accordingly decided:

not to raise objections to the aid on the grounds that it is compatible with the internal market pursuant to Article 107(3)(c) of the Treaty on the Functioning of the European Union

If any parts of this letter are covered by the obligation of professional secrecy according to the Commission communication on professional secrecy and should not be published, please inform the Commission within fifteen working days of notification of this letter. If the Commission does not receive a reasoned request by that deadline Portugal will be deemed to agree to the publication of the full text of this letter. Portugal wishes certain information to be covered by the obligation of professional secrecy please indicate the parts and provide a justification in respect of each part for which non-disclosure is requested.

Your request should be sent electronically in accordance with Article 3(4) of Commission Regulation (EC) No 794/2004,

Yours faithfully
For the Commission

Margrethe VESTAGER
Member of the Commission